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RESPONSE TO ADVISORY ACTION

January 29, 2004

Commissioner for Patents

P.O Box 1450

Alexandria VA 22313-1450

Petition to patent examiner Ruth A. Davis

Pertaining to Advisory Action, date mailed 01/13/2004, regarding patent application serial number 09/888,741, filed by Gene E. Lightner 06/25/2001, response to Advisory Action is enclosed within.

Attached to the office communication mailed 01/13/2003 is a stapled summary of a pilot project relating to mailing foreign and U.S. patents. Relationship of this pilot project to the current case is unnecessary and unsolicited.

Acknowledgment that the period for response expires five months from the date of final rejection is noted.

Continuation of 5, prior art, supplied by the examiner, relates procedures substantially different than independent claim 1 of the present application. It will be established that the prior art is inapplicable to the present application, such as employing a membrane to divide a filtrate containing water soluble carbohydrates and provide enzymes for recycle. Dependent claims, within the present application, depend on said claim 1.

Prior art declaration of Chahal, page 5, lines 6-13 states "Lignin in the biomass of plant origin is bonded physically and chemically to the plant polysaccharides, therefore, limited action is performed by microbial hemicellulases and cellulases due to the metabolic blocks of lignin-carbohydrate bonds. Hence, lignin has to be depolymerized, solublized or removed in order to allow cellulases and hemicellulases to hydrolyse the exposed hemicellulose and cellulose. The description of a biomass is believed to be correct.. By using one of a well known pulping process lignin can be removed from wood chips to produce pulp substantially free of lignin. Because separation of cellulose, hemicellulose and lignin is specified, it is accordingly concluded that this prior art is dissimilar than the disclosure within the present application, independent claim 1.

A method for separation of hemicellulose from cellulose is unknown except by prehydrolysis presented by Torget, et al. wherein, hemicellulose is substantially converted and removed from a lignocellulose material by a prehydrolysis procedure. The prior art presented by Liaw, et al., discloses a method for converting starch solutions by enzymes to produce saccharide preparations. In fermentation of corn starch, this well known process is preceded by treatment with an enzyme to produce water soluble polysaccharides, followed by customary enzymes to yield glucose.

Application of this prior art is without justification, or relied upon, within the current application. It is concluded that the examiner has failed to establish relevance to the present application.

The amended specification, page 5, lines 12 and 13, submits an amended statement. "In the preferred embodiment of the present invention, as claimed within claim 1, means of producing water soluble carbohydrates derived from lignocellulose is presented." Thus the specification has been amended to meet the requirement of U.S.C. 35. 112 second paragraph.

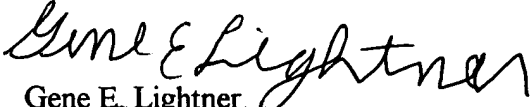
For reference, amended claims, previously presented, are contributed herein. Claim 1, within the present invention, is amended to clarify the intention of this claim, without altering the scope or intention of the application. Claim 1 is amended from claim 1 presented within the original application, so as maintain scope, provide consistency and thus avoid confusion. Claims (currently amended) are enclosed, which contain suggestions of the examiner. Thus claim 1 is amended to overcome objections of clarity, and provides (, and) rather than enumeration, to clearly specify each step of the method. It is made clear that hydrolysis of lignocellulose by enzymes produces water soluble carbohydrates. Furthermore hydrolysis forms a lignin residue for filtering. This procedure is declared within amended claim 1. Pertinent part of the specification is shown above.

As stated, all claims have been rejected, so a clean copy of original dependent claims is unneeded, as specified in 37. CFR. 1.121.

This letter is to be considered a response to said office communication and said Advisory Action.

It is expected that upon examination of the specification and separate sheets, claims, will be allowed by the Examiner.

Very respectfully,


Gene E. Lightner